

0590
0523

#7



= OIPE

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/10/047,991

DATE: 05/28/2002
 TIME: 09:24:23

Input Set : A:\Hmv08001.app
 Output Set: N:\CRF3\05282002\J047991.raw

ENTERED

3 <110> APPLICANT: REED, ROBIN
 4 ZHOU, ZHAOLAN
 6 <120> TITLE OF INVENTION: PURIFICATION OF FUNCTIONAL RIBONUCLEOPROTEIN COMPLEXES
 8 <130> FILE REFERENCE: Hmv-080.01
 10 <140> CURRENT APPLICATION NUMBER: 10/047,991
 11 <141> CURRENT FILING DATE: 2002-01-14
 13 <150> PRIOR APPLICATION NUMBER: 60/261,521
 14 <151> PRIOR FILING DATE: 2001-01-12
 16 <160> NUMBER OF SEQ ID NOS: 12
 18 <170> SOFTWARE: PatentIn Ver. 2.1
 20 <210> SEQ ID NO: 1
 21 <211> LENGTH: 393
 22 <212> TYPE: DNA
 23 <213> ORGANISM: Enterobacteria phage MS2
 25 <220> FEATURE:
 26 <221> NAME/KEY: CDS
 27 <222> LOCATION: (1)..(390)
 29 <400> SEQUENCE: 1
 30 atg gct tct aac ttt act cag ttc gtt ctc gtc gac aat ggc gga act 48
 31 Met Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asp Asn Gly Gly Thr
 32 1 5 10 15
 34 ggc gac gtg act gtc gcc cca agc aac ttc gct aac ggg gtc gct gaa 96
 35 Gly Asp Val Thr Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu
 36 20 25 30
 38 tgg atc agc tct aac tcg cgt tca cag gct tac aaa gta acc tgt agc 144
 39 Trp Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser
 40 35 40 45
 42 gtt cgt cag agc tct gcg cag aat cgc aaa tac acc atc aaa gtc gag 192
 43 Val Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu
 44 50 55 60
 46 gtg cct aaa gtg gca acc cag act gtt ggt ggt gta gag ctt cct gta 240
 47 Val Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val
 48 65 70 75 80
 50 gcc gca tgg cgt tcg tac tta aat atg gaa cta acc att cca att ttc 288
 51 Ala Ala Trp Arg Ser Tyr Leu Asn Met Glu Leu Thr Ile Pro Ile Phe
 52 85 90 95
 54 gct acg aat tcc gac tgc gag ctt att gtt aag gca atg caa ggt ctc 336
 55 Ala Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu
 56 100 105 110
 58 cta aaa gat gga aac ccg att ccc tca gca atc gca gca aac tcc ggc 384
 59 Leu Lys Asp Gly Asn Pro Ile Pro Ser Ala Ile Ala Ala Asn Ser Gly
 60 115 120 125
 62 atc tac taa 393

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/047,991

DATE: 05/28/2002
TIME: 09:24:23

Input Set : A:\Hmv08001.app
Output Set: N:\CRF3\05282002\J047991.raw

```

63 Ile Tyr
64      130
67 <210> SEQ ID NO: 2
68 <211> LENGTH: 130
69 <212> TYPE: PRT
70 <213> ORGANISM: Enterobacteria phage MS2
72 <400> SEQUENCE: 2
73 Met Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asp Asn Gly Gly Thr
74      1          5          10          15
76 Gly Asp Val Thr Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu
77      20          25          30
79 Trp Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser
80      35          40          45
82 Val Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu
83      50          55          60
85 Val Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val
86      65          70          75          80
88 Ala Ala Trp Arg Ser Tyr Leu Asn Met Glu Leu Thr Ile Pro Ile Phe
89      85          90          95
91 Ala Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu
92      100         105         110
94 Leu Lys Asp Gly Asn Pro Ile Pro Ser Ala Ile Ala Ala Asn Ser Gly
95      115         120         125
97 Ile Tyr
98      130
101 <210> SEQ ID NO: 3
102 <211> LENGTH: 1380
103 <212> TYPE: DNA
104 <213> ORGANISM: Escherichia coli
106 <400> SEQUENCE: 3
107 tacgttttcgg ttttgtaggc cggacaaggc gttcacgcgc catccggcat ttcacagcat 60
108 tacttggtga tacgagtctg cgcgtctttc agggcttcat cgacagtctg acgaccgctg 120
109 gcggcgttga tcaccgcagt acgcacggca taccagaaag cggacatctg cgggatgttc 180
110 ggcattgattt cacttttctg ggcgttttcc atggtggcgc caatacgtgg atctttcgcc 240
111 aactcttcct cgtaagactt cagcgctacg gcaccagcg gtttgtcttt attaaccgct 300
112 tccagacctt catcagtcag cagatagttt tcgaggaaact ctttcgccag ctctttgttc 360
113 ggactggcgc cgtaataacc tgcgctcagc acgccaacga acggtttgga tgggtgacct 420
114 ttgaaggctc gcagtaccgt tacaccataa ttcaacttgc tgggtgcgat gttggacct 480
115 gcccacgggc cgttgatggt catcgctggt tcgcctttat taaaggcagc ttctgcgatg 540
116 gagtaatcgc tgtctgcatt catgtgtttg tttttaatca ggtcaaccag gaaggtcaga 600
117 cccgcttttc cgccagcgtt atccaagccc acgtctttaa tgtcgtactt gccgttttca 660
118 tacttgaacg cataaccccc gtcagcagca atcagcggcc aggtgaagta cggttcttgc 720
119 aggttgaaca tcagcgcgct cttacctttc gctttcagtt ctttatccag cgccgggata 780
120 tcttccaggg tttttggcgc gttcggcagc agatctttgt tataaatcag cgataacgct 840
121 tcaacagcga tcgggtaagc aatcagcttg ccgttgtaac gtacggcatc ccaggtaaac 900
122 ggatacagct tgtcctggaa cgctttgtcc ggggtgattt cagccaacag gccagattga 960
123 gcgtagccac caaagcggtc gtgtgccagc aagataatgt cagggccatc gccagttgcc 1020
124 gcaacctgtg ggaattttct ttccagttta tccggatgct caacggtgac tttaattcgc 1080
125 gtatctttct cgaattttct accgacttca gcgagaccgt tatagccttt atcgccgtta 1140

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/047,991

DATE: 05/28/2002
TIME: 09:24:23

Input Set : A:\Hmv08001.app
Output Set: N:\CRF3\05282002\J047991.raw

```

126 atccagatta ccagtttacc ttcttcgatt ttggcgagag ccgaggcgga aaacatcatc 1200
127 gtcgttaatg cggataatgc gaggatgcgt gcacctgttt ttattttcat aatctatggt 1260
128 ccttggtggt gaagtgtcgt tgaaaacacc taaacggact ctagtttctt tatacggcaa 1320
129 cctctttcca tctccttgcc ccctacgccc caccgtcgtt ttgtgtgata tctgttacag 1380
132 <210> SEQ ID NO: 4
133 <211> LENGTH: 396
134 <212> TYPE: PRT
135 <213> ORGANISM: Escherichia coli
137 <400> SEQUENCE: 4
138 Met Lys Ile Lys Thr Gly Ala Arg Ile Leu Ala Leu Ser Ala Leu Thr
139 1 5 10 15
141 Thr Met Met Phe Ser Ala Ser Ala Leu Ala Lys Ile Glu Glu Gly Lys
142 20 25 30
144 Leu Val Ile Trp Ile Asn Gly Asp Lys Gly Tyr Asn Gly Leu Ala Glu
145 35 40 45
147 Val Gly Lys Lys Phe Glu Lys Asp Thr Gly Ile Lys Val Thr Val Glu
148 50 55 60
150 His Pro Asp Lys Leu Glu Glu Lys Phe Pro Gln Val Ala Ala Thr Gly
151 65 70 75 80
153 Asp Gly Pro Asp Ile Ile Phe Trp Ala His Asp Arg Phe Gly Gly Tyr
154 85 90 95
156 Ala Gln Ser Gly Leu Leu Ala Glu Ile Thr Pro Asp Lys Ala Phe Gln
157 100 105 110
159 Asp Lys Leu Tyr Pro Phe Thr Trp Asp Ala Val Arg Tyr Asn Gly Lys
160 115 120 125
162 Leu Ile Ala Tyr Pro Ile Ala Val Glu Ala Leu Ser Leu Ile Tyr Asn
163 130 135 140
165 Lys Asp Leu Leu Pro Asn Pro Pro Lys Thr Trp Glu Glu Ile Pro Ala
166 145 150 155 160
168 Leu Asp Lys Glu Leu Lys Ala Lys Gly Lys Ser Ala Leu Met Phe Asn
169 165 170 175
171 Leu Gln Glu Pro Tyr Phe Thr Trp Pro Leu Ile Ala Ala Asp Gly Gly
172 180 185 190
174 Tyr Ala Phe Lys Tyr Glu Asn Gly Lys Tyr Asp Ile Lys Asp Val Gly
175 195 200 205
177 Val Asp Asn Ala Gly Ala Lys Ala Gly Leu Thr Phe Leu Val Asp Leu
178 210 215 220
180 Ile Lys Asn Lys His Met Asn Ala Asp Thr Asp Tyr Ser Ile Ala Glu
181 225 230 235 240
183 Ala Ala Phe Asn Lys Gly Glu Thr Ala Met Thr Ile Asn Gly Pro Trp
184 245 250 255
186 Ala Trp Ser Asn Ile Asp Thr Ser Lys Val Asn Tyr Gly Val Thr Val
187 260 265 270
189 Leu Pro Thr Phe Lys Gly Gln Pro Ser Lys Pro Phe Val Gly Val Leu
190 275 280 285
192 Ser Ala Gly Ile Asn Ala Ala Ser Pro Asn Lys Glu Leu Ala Lys Glu
193 290 295 300
195 Phe Leu Glu Asn Tyr Leu Leu Thr Asp Glu Gly Leu Glu Ala Val Asn
196 305 310 315 320

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/047,991

DATE: 05/28/2002

TIME: 09:24:23

Input Set : A:\Hmv08001.app

Output Set: N:\CRF3\05282002\J047991.raw

```

198 Lys Asp Lys Pro Leu Gly Ala Val Ala Leu Lys Ser Tyr Glu Glu Glu
199                               325                               330                               335
201 Leu Ala Lys Asp Pro Arg Ile Ala Ala Thr Met Glu Asn Ala Gln Lys
202                               340                               345                               350
204 Gly Glu Ile Met Pro Asn Ile Pro Gln Met Ser Ala Phe Trp Tyr Ala
205                               355                               360                               365
207 Val Arg Thr Ala Val Ile Asn Ala Ala Ser Gly Arg Gln Thr Val Asp
208                               370                               375                               380
210 Glu Ala Leu Lys Asp Ala Gln Thr Arg Ile Thr Lys
211 385                               390                               395
214 <210> SEQ ID NO: 5
215 <211> LENGTH: 44
216 <212> TYPE: DNA
217 <213> ORGANISM: Artificial Sequence
219 <220> FEATURE:
220 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
222 <400> SEQUENCE: 5
223 caggtcatat gggtcgcgcg gcttctaact ttactcagtt cggt 44
226 <210> SEQ ID NO: 6
227 <211> LENGTH: 44
228 <212> TYPE: DNA
229 <213> ORGANISM: Artificial Sequence
231 <220> FEATURE:
232 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
234 <400> SEQUENCE: 6
235 tgctactcga gggcgctagc gtagatgccg gagtttgctg cgat 44
238 <210> SEQ ID NO: 7
239 <211> LENGTH: 19
240 <212> TYPE: DNA
241 <213> ORGANISM: Artificial Sequence
243 <220> FEATURE:
244 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
245 recognition oligonucleotide
247 <400> SEQUENCE: 7
248 cgtacaccat caggggtacg 19
251 <210> SEQ ID NO: 8
252 <211> LENGTH: 17
253 <212> TYPE: PRT
254 <213> ORGANISM: Artificial Sequence
256 <220> FEATURE:
257 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
258 fusion peptide
260 <400> SEQUENCE: 8
261 Leu Val Pro Arg Gly Ser His Met Arg Gly Ser His His His His His
262 1 5 10 15
264 His
267 <210> SEQ ID NO: 9
268 <211> LENGTH: 7
269 <212> TYPE: PRT

```

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/10/047,991

DATE: 05/28/2002
 TIME: 09:24:23

Input Set : A:\Hmv08001.app
 Output Set: N:\CRF3\05282002\J047991.raw

```

270 <213> ORGANISM: Artificial Sequence
272 <220> FEATURE:
273 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
274     thrombin cleavage site peptide
276 <400> SEQUENCE: 9
277 Leu Val Pro Arg Gly Ser His
278   1                               5
281 <210> SEQ ID NO: 10
282 <211> LENGTH: 10
283 <212> TYPE: PRT
284 <213> ORGANISM: Artificial Sequence
286 <220> FEATURE:
287 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
288     peptide
290 <400> SEQUENCE: 10
291 Met Arg Gly Ser His His His His His
292   1                               5                               10
295 <210> SEQ ID NO: 11
296 <211> LENGTH: 455
297 <212> TYPE: DNA
298 <213> ORGANISM: Artificial Sequence
300 <220> FEATURE:
301 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
302     nucleotide sequence
304 <400> SEQUENCE: 11
305 taatacgact cactataggg agaccggcag atcagcttgg ccgcgtccat ctgggtcatct 60
306 aggatctgat atcatcgatg aattcgagct cggtaacccg ttcgtcctca ctctcttccg 120
307 catcgctgtc tgcgagggcc agctgttggg gtgagtactc cctctcaaaa gcgggcatga 180
308 cttctgccct cgagttatta accctcacta aaggcagtag tcaagggttt ccttgaagct 240
309 ttcgtgctga ccctgtccct tttttttcca cagctgcagg tgcacgttga ggacaaactc 300
310 ttcgcggtct ttccagtact cttggatccg atatccgtac accatcaggg tacgagctag 360
311 cccatggcgt acaccatcag ggtacgacta gtagatctcg tacaccatca gggtacggaa 420
312 ttctctagag tcgagttcta tagtgtcacc taaat 455
315 <210> SEQ ID NO: 12
316 <211> LENGTH: 6
317 <212> TYPE: PRT
318 <213> ORGANISM: Artificial Sequence
320 <220> FEATURE:
321 <223> OTHER INFORMATION: Description of Artificial Sequence: 6x His tag
323 <400> SEQUENCE: 12
324 His His His His His His
325   1                               5

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/047,991

DATE: 05/28/2002

TIME: 09:24:24

Input Set : A:\Hmv08001.app

Output Set: N:\CRF3\05282002\J047991.raw